

CLAIMS

1 1. A printed circuit board comprising:

2 a printed wiring board;

3 a plurality of components mounted on said printed wiring board; and

4 a high viscosity, electrically non-conductive filler material covering a region of the
5 printed wiring board having at least one cavity, wherein said filler material substantially
6 covering said cavity such that said covered cavity is substantially inaccessible and that said
7 covered region has a contiguous, contoured surface.

1 2. The printed circuit board of claim 1, wherein said filler material at least partially infills
2 said cavity.

1 3. The printed circuit board of claim 1, wherein at least one of said plurality of cavities is
2 between and beneath leads of a component.

1 4. The printed circuit board of claim 1, wherein at least one of said cavities is between
2 neighboring components mounted on the printed wiring board.

1 5. The printed circuit board of claim 1, wherein at least one of said cavities is between a
2 component and printed wiring board.

1 6. The printed circuit board of claim 1, wherein said filler material is thixotropic.

1 7. The printed circuit board of claim 1, wherein said filler material is an epoxy.

1 8. The printed circuit board of claim 9, wherein said epoxy is one of the family of
2 Bisphenol-A epoxies mixed with an amine hardner.

1 9. The printed circuit board of claim 7, wherein said epoxy is a thermally cured epoxy.

1 10. The printed circuit board of claim 7, wherein said epoxy is a latex based non-electrically
2 conductive epoxy.

1 11. The printed circuit board of claim 1, wherein said filler material is one of a plurality of
2 different filler materials.

1 12. A printed circuit board comprising one or more regions having a highly variable and
2 cavitationous surface that is coated with a high viscosity, non-electrically-conductive filler
3 material to provide a contoured, contiguous filler material surface having gradual transitions,
4 wherein said filler material bridges across and at least partially infills cavities in the one or
5 more regions of said printed circuit board.

1 13. The printed circuit board of claim 12, wherein said filler material is thixotropic.

1 14. The printed circuit board of claim 13, wherein said filler material is an epoxy.

1 15. The printed circuit board of claim 14, wherein said epoxy is one of the family of
2 Bisphenol-A epoxies mixed with an amine hardner.

1 16. The printed circuit board of claim 14, wherein said epoxy is a thermally cured epoxy.

1 17. The printed circuit board of claim 14, wherein said epoxy is a latex based non-
2 electrically conductive epoxy.

1 18. A method for preparing a printed circuit board to receive a board-level coating,
2 comprising the steps of:
3 providing the printed circuit board;
4 coating selected cavitationous and highly variable regions of said printed circuit board with
5 a high viscosity, non-electrically-conductive filler material, such that said filler material
6 provides a contoured, contiguous surface across said region.

1 19. The method of claim 18, further comprising:
2 applying a coating to predetermined portions of said printed circuit board including said
3 region coated with said filler material.